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Term	Documents
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ADJOIN	40969
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ADJOINACT	1
ADJOINAN	2
ADJOINAND	1
ADJOINANP	1
ADJOINBAG	1
ADJOINBAR	1
(L17 AND (ADJOIN\$3 OR CLOSE)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	24

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<u>L18</u>	L17 and (adjoin\$3 or close)	24	<u>L18</u>
<u>L17</u>	L16 and L6 and L7	53	<u>L17</u>
<u>L16</u>	L14 and L10	53	<u>L16</u>
<u>L15</u>	L14 and L12	0	<u>L15</u>
<u>L14</u>	L13 and L6 and L9	120	<u>L14</u>
<u>L13</u>	(support or (patient with support))	3963948	<u>L13</u>
<u>L12</u>	(magner\$3 with (holder or member))	16	<u>L12</u>
<u>L11</u>	L10 and ((complete) with (RF adj shield\$4))	8	<u>L11</u>
<u>L10</u>	L9 and L8	89	<u>L10</u>
<u>L9</u>	L6 and (magnetic adj resonance)	190	<u>L9</u>
<u>L8</u>	L7 and (magnetic adj resonance)	306	<u>L8</u>
<u>L7</u>	(magnet\$3 with (Rf adj shield\$4)) or (magnet-RF-shield\$4)	383	<u>L7</u>
<u>L6</u>	(RF adj shield\$4) and (holder or member)	819	<u>L6</u>
<u>L5</u>	(RF adj dhild\$4) and (holder or member)	0	<u>L5</u>
<u>L4</u>	5280249	11	<u>L4</u>
<u>L3</u>	5453692	20	<u>L3</u>
<u>L2</u>	5814993	6	<u>L2</u>
<u>L1</u>	6084409	5	<u>L1</u>

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Search Results - Record(s) 1 through 8 of 8 returned.

- ☐ 1. Document ID: US 20040196043 A1 Relevance Rank: 90

Using default format because multiple data bases are involved.

L11: Entry 6 of 8

File: DWPI

Oct 7, 2004

DERWENT-ACC-NO: 2004-746076

DERWENT-WEEK: 200520

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TITLE: Radio frequency shield for performing nuclear magnetic resonance procedure e.g. MRI, has radio-opaque holder with RF shielding and forming shield when holder is adjoined to cavity of magnet associated with magnet-RF-shielding

INVENTOR: BRANCH, C A; HELPERN, J A

PRIORITY-DATA: 2001US-0985473 (November 2, 2001), 2004US-0826260 (April 19, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US <u>20040196043 A1</u>	October 7, 2004		011	G01V003/00

INT-CL (IPC): G01 V 3/00

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Know	Draw D
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- ☐ 2. Document ID: US 20030088175 A1 Relevance Rank: 88

L11: Entry 8 of 8

File: DWPI

May 8, 2003

DERWENT-ACC-NO: 2003-557622

DERWENT-WEEK: 200520

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TITLE: Radio frequency shield for nuclear magnetic resonance procedure, has holder for forming complete RF shield, when adjoined to cavity of magnet associated with RF shielding

INVENTOR: BRANCH, C A; HELPERN, J A

PATENT-ASSIGNEE: ADVANCED VETERINARY TECHNOLOGIES INC (ADVEN)

PRIORITY-DATA: 2001US-0985473 (November 2, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>US 20030088175 A1</u>	May 8, 2003		012	A61B005/05

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US20030088175A1	November 2, 2001	2001US-0985473	

INT-CL (IPC): A61 B 5/05

RELATED-ACC-NO: 2004-736117;2004-746076 ;2005-194124

ABSTRACTED-PUB-NO: US20030088175A

BASIC-ABSTRACT:

NOVELTY - The radio frequency (RF) shield has a radio-opaque holder (103) comprising a bottom portion (105) and a canopy (109). When the holder is adjoined to the cavity of a magnet (115) associated with the RF shielding, a complete RF shield is formed, consisting of the canopy, bottom portion, a cryostat and a service end cap.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) RF shield system; and
- (2) method for providing RF shielding for patient.

USE - For providing RF shielding for performing nuclear magnetic resonance (NMR) procedure such as magnetic resonance imaging (MRI), magnetic resonance angiography (MRA) and magnetic resonance spectroscopy (MRS), in clinical veterinary applications.

ADVANTAGE - Eliminates the need for a dedicated RF-shielded room for performing NMR procedures by forming the shield around the patient and the RF coils, thereby reducing the cost associated with NMR procedures.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the RF shield.holder 103

bottom portion 105

canopy 109

magnet 115

ABSTRACTED-PUB-NO: US20030088175A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1/2

DERWENT-CLASS: P31 S01 S03 V04

EPI-CODES: S01-E02A2; S01-E02A8X; S03-E07A; V04-U;

Full	Title	Citation	Print	Review	Classification	Date	Reference			Claims	FIG	Draw D
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☐ 3. Document ID: US 20030088175 A1 Relevance Rank: 80

L11: Entry 4 of 8

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030088175

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030088175 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpern, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor	NY			02

APPL-NO: 09/985473 [PALM]

DATE FILED: November 2, 2001

INT-CL-PUBLISHED: [07] A61 B 5/05

US-CL-PUBLISHED: 600/410

US-CL-CURRENT: 600/410

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Print	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIG	Draw D
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☐ 4. Document ID: US 20040194989 A1 Relevance Rank: 80

L11: Entry 3 of 8

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040194989

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040194989 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpert, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor		US		02

APPL-NO: 10/826297 [PALM]

DATE FILED: April 19, 2004

RELATED-US-APPL-DATA:

Application 10/826297 is a division-of US application 09/985473, filed November 2, 2001, PENDING

INT-CL-PUBLISHED: [07] H05 K 9/00

US-CL-PUBLISHED: 174/035.0MS

US-CL-CURRENT: 174/35MS

REPRESENTATIVE-FIGURES: 1B

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw.Ds
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☐ 5. Document ID: US 20050027189 A1 Relevance Rank: 80

L11: Entry 1 of 8

File: PGPB

Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050027189

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050027189 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: February 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpern, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor	NY			02

APPL-NO: 10/826321 [PALM]

DATE FILED: April 19, 2004

RELATED-US-APPL-DATA:

Application 10/826321 is a division-of US application 09/985473, filed November 2, 2001, PENDING

INT-CL-PUBLISHED: [07] G01 V 3/00

US-CL-PUBLISHED: 600/410

US-CL-CURRENT: 600/410

REPRESENTATIVE-FIGURES: 2A

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Index	Draw U.
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☐ 6. Document ID: US 20040196043 A1 Relevance Rank: 80

L11: Entry 2 of 8

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040196043

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040196043 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpern, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor	NY			02

APPL-NO: 10/826260 [PALM]

DATE FILED: April 19, 2004

RELATED-US-APPL-DATA:

Application 10/826260 is a division-of US application 09/985473, filed November 2, 2001, PENDING

INT-CL-PUBLISHED: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318

US-CL-CURRENT: 324/318

REPRESENTATIVE-FIGURES: 1C, 2

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	DOC	Draw U
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☐ 7. Document ID: US 20040194989 A1 Relevance Rank: 79

L11: Entry 7 of 8

File: DWPI

Oct 7, 2004

DERWENT-ACC-NO: 2004-736117

DERWENT-WEEK: 200520

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TITLE: RF shielding providing method for patient, involves placing patient on holder that comprises RF shielding for forming complete RF shield around patient when holder is adjoined to cavity of magnet related with magnet-RF-shielding

INVENTOR: BRANCH, C A; HELPERN, J A

PATENT-ASSIGNEE: ADVANCED VETERINARY TECHNOLOGIES INC (ADVEN)

PRIORITY-DATA: 2001US-0985473 (November 2, 2001), 2004US-0826297 (April 19, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>US 20040194989 A1</u>	October 7, 2004		011	H05K009/00

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US20040194989A1	November 2, 2001	2001US-0985473	Div ex
US20040194989A1	April 19, 2004	2004US-0826297	

INT-CL (IPC): H05 K 9/00

RELATED-ACC-NO: 2003-557622;2004-746076 ;2005-194124

ABSTRACTED-PUB-NO: US20040194989A

BASIC-ABSTRACT:

NOVELTY - The method involves placing a patient on a holder (103) that comprises a RF shielding. The shielding forms a complete RF shield around the patient when the holder is adjoined to a cavity (116) of a magnet (115) associated with magnet-RF-shielding. The shielding is placed over a service end of the magnet.

USE - Used for providing a radio frequency shielding during nuclear magnetic resonance (NMR) procedure e.g. diagnostic magnetic resonance imaging (MRI), especially in clinical veterinary applications.

ADVANTAGE - The method facilitates placing patient on holder that comprises RF shielding for complete RF shield around patient when the holder is adjoined to cavity of the magnet, thus effectively supporting NMR procedures as well as AC lighting fixtures.

DESCRIPTION OF DRAWING(S) - The drawing shows a holder with canopy removed, as it

relates to an NMR magnet during an NMR procedure.

Holder 103

Magnet 115

Cavity 116

Cryostat 117

Patient support unit 131

ABSTRACTED-PUB-NO: US20040194989A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1B/2

DERWENT-CLASS: S01 S03 S05 V04

EPI-CODES: S01-E02A2; S01-E02A8X; S01-J02; S03-E07A; S05-D02B1; S05-X; V04-U;

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Code	Draw D
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☐ 8. Document ID: US 6060882 A Relevance Rank: 68

L11: Entry 5 of 8

File: USPT

May 9, 2000

US-PAT-NO: 6060882

DOCUMENT-IDENTIFIER: US 6060882 A

TITLE: Low-inductance transverse litz foil coils

DATE-ISSUED: May 9, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Doty; F. David	Columbia	SC		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Doty Scientific, Inc.	Columbia	SC			02

APPL-NO: 09/091987 [PALM]

DATE FILED: June 29, 1998

PARENT-CASE:

This is a national-stage of PCT application no. PCT/US96/20706, filed Dec. 26, 1996, claiming priority from provisional application no. 60/009,408, filed Dec. 29, 1995.

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE
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PCT/US96/20706 December 26, 1996 WO97/26560 Jul 24, 1997 Jun 29, 1998

INT-CL-ISSUED: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/319, 324/322, 600/421

US-CL-CURRENT: 324/318; 324/319, 324/322, 600/421

FIELD-OF-CLASSIFICATION-SEARCH: 324/300-322, 324/318, 600/421

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4398149</u>	August 1983	Zens	324/319
<u>4517516</u>	May 1985	Hill	324/318
<u>4549136</u>	October 1985	Zens	324/308
<u>4563648</u>	January 1986	Hill	324/318
<u>4641098</u>	February 1987	Doty	324/322
<u>4820987</u>	April 1989	Mens	324/318
<u>4878022</u>	October 1989	Carlson	324/318
<u>5379768</u>	January 1995	Smalen	128/653.5
<u>5481191</u>	January 1996	Rzedzian	324/318

OTHER PUBLICATIONS

Borsboom et al. Low-frequency quadrature mode birdcage resonator' MAGMA (united states) Mar. 1997, 5(1) pp.33-37 ISSN 0968-5243.

Leifer, Mark C. "Theory of the quadrature Elliptic Birdcage Coil" Magnetic Resonance in Medicine MRM vol. 38 pp. 726-732, Apr. 1997.

Li, Shizhe et al. "A Method to Create an Optimum Current Distribution and Homogeneous B1 Field for Elliptical Birdcage Coils" Magnetic Resonance in Medicine MRM vol. 37, pp. 600-608, Mar. 1997.

Vujcic, T. et al., "Transverse Low-Field RF Coils in MRI" Magnetic Resonance in Medicine MRM vol. 36 1997 pp. 111-116, Dec. 1996.

L. Bollinger, M.G. Prammer, and J.S. Leigh, "A Multiple-Frequency Coil with a Highly Uniform B.sub.1 Field," J. Magn. Reson., 1988, 81, 162-166.

G.J. Kost, S.E. Anderson, G.B. Matson, and C.B. Conboy, "A Cylindrical-Window NMR Probe with Extended and Tuning Range for Studies of the Developing Heart," J. Magn. Reson., 1989, 82, 238-252.

G. Isaac, M.D. Schnall, R.E. Lenkinski, and K. Vogele, "A Design for a Double-Tuned Birdcage Coil for Use in an Integrated MRI/MRS Examination," J. Magn. Reson., 1990, 89, 42-50.

J.R. Fitzsimmons, B.L. Beck, H.R. Brooker, "Double Resonant Quadrature Birdcage," Magn. Reson. in Med., 1993, 30, 107-114.

F.D. Doty, "Probe Design and Construction," Encyclopedia of NMR, Wiley Press, 1996.

ART-UNIT: 282

PRIMARY-EXAMINER: Oda; Christine K.

ASSISTANT-EXAMINER: Fetzner; Tiffany A.

ATTY-AGENT-FIRM: Oppedahl & Larson LLP

ABSTRACT:

A family of NMR coils based on Litz foil conductor groups is disclosed. The simplest embodiment is a two-element Litz foil coil. The foils are joined at node (1) and node (2) and are electrically insulated at crossover (3). When the coil is positioned in a plane perpendicular to a uniform magnetic field, the areas (A) defining two flux sub-windows must be equal.

37 Claims, 39 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Keywords	Drawings
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Term	Documents
COMPLETE	2034815
COMPLETES	203218
RF	333974
RFS	2204
SHIELD\$4	0
SHIELD	384650
SHIELDA	14
SHIELDAB	1
SHIELDABIE	1
SHIELDABL	1
(L10 AND ((COMPLETE) WITH (RF ADJ SHIELD\$4))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8

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Term	Documents
COMPLETE	2034815
COMPLETES	203218
RF	333974
RFS	2204
SHIELDS\$4	0
SHIELD	384650
SHIELDA	14
SHIELDAB	1
SHIELDABIE	1
SHIELDABL	1
SHIELDABLE	907
(L10 AND ((COMPLETE) WITH (RF ADJ SHIELDS\$4))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8

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Search:

L11

Refine Search

Recall Text 

Clear

Interrupt

Search History

DATE: Monday, January 09, 2006 [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L11</u>	L10 and ((complete) with (RF adj shield\$4))	8	<u>L11</u>
<u>L10</u>	L9 and L8	89	<u>L10</u>
<u>L9</u>	L6 and (magnetic adj resonance)	190	<u>L9</u>
<u>L8</u>	L7 and (magnetic adj resonance)	306	<u>L8</u>
<u>L7</u>	(magnet\$3 with (Rf adj shield\$4)) or (magnet-RF-shield\$4)	383	<u>L7</u>
<u>L6</u>	(RF adj shield\$4) and (holder or member)	819	<u>L6</u>
<u>L5</u>	(RF adj dhild\$4) and (holder or member)	0	<u>L5</u>
<u>L4</u>	5280249	11	<u>L4</u>
<u>L3</u>	5453692	20	<u>L3</u>
<u>L2</u>	5814993	6	<u>L2</u>
<u>L1</u>	6084409	5	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

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SHIELDA	14
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SHIELDABIE	1
SHIELDABL	1
SHIELDABLE	907
(L10 AND ((COMPLETE) WITH (RF ADJ SHIELDS\$4))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8

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L11

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side by side

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result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L11</u>	L10 and ((complete) with (RF adj shield\$4))	8	<u>L11</u>
<u>L10</u>	L9 and L8	89	<u>L10</u>
<u>L9</u>	L6 and (magnetic adj resonance)	190	<u>L9</u>
<u>L8</u>	L7 and (magnetic adj resonance)	306	<u>L8</u>
<u>L7</u>	(magnet\$3 with (Rf adj shield\$4)) or (magnet-RF-shield\$4)	383	<u>L7</u>
<u>L6</u>	(RF adj shield\$4) and (holder or member)	819	<u>L6</u>
<u>L5</u>	(RF adj dhild\$4) and (holder or member)	0	<u>L5</u>
<u>L4</u>	5280249	11	<u>L4</u>
<u>L3</u>	5453692	20	<u>L3</u>
<u>L2</u>	5814993	6	<u>L2</u>
<u>L1</u>	6084409	5	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

Term	Documents
CLOSE	2313880
CLOSES	491897
ADJOIN\$3	0
ADJOIN	40969
ADJOINA	5
ADJOINACT	1
ADJOINAN	2
ADJOINAND	1
ADJOINANP	1
ADJOINBAG	1
ADJOINBAR	1
(L17 AND (ADJOIN\$3 OR CLOSE)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	24

There are more results than shown above. [Click here to view the entire set.](#)

Database:

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US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
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Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

L18

Refine Search

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Search History

DATE: Monday, January 09, 2006 [Printable Copy](#) [Create Case](#)

Set Name Query
side by side

Hit Count Set Name
result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L18</u>	L17 and (adjoin\$3 or close)	24	<u>L18</u>
<u>L17</u>	L16 and L6 and L7	53	<u>L17</u>
<u>L16</u>	L14 and L10	53	<u>L16</u>
<u>L15</u>	L14 and L12	0	<u>L15</u>
<u>L14</u>	L13 and L6 and L9	120	<u>L14</u>
<u>L13</u>	(support or (patient with support))	3963948	<u>L13</u>
<u>L12</u>	(magner\$3 with (holder or member))	16	<u>L12</u>
<u>L11</u>	L10 and ((complete) with (RF adj shield\$4))	8	<u>L11</u>
<u>L10</u>	L9 and L8	89	<u>L10</u>
<u>L9</u>	L6 and (magnetic adj resonance)	190	<u>L9</u>
<u>L8</u>	L7 and (magnetic adj resonance)	306	<u>L8</u>
<u>L7</u>	(magnet\$3 with (Rf adj shield\$4)) or (magnet-RF-shield\$4)	383	<u>L7</u>
<u>L6</u>	(RF adj shield\$4) and (holder or member)	819	<u>L6</u>
<u>L5</u>	(RF adj dhild\$4) and (holder or member)	0	<u>L5</u>
<u>L4</u>	5280249	11	<u>L4</u>
<u>L3</u>	5453692	20	<u>L3</u>
<u>L2</u>	5814993	6	<u>L2</u>
<u>L1</u>	6084409	5	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

Term	Documents
CLOSE	2313880
CLOSES	491897
ADJOIN\$3	0
ADJOIN	40969
ADJOINA	5
ADJOINACT	1
ADJOINAN	2
ADJOINAND	1
ADJOINANP	1
ADJOINBAG	1
ADJOINBAR	1
(L17 AND (ADJOIN\$3 OR CLOSE)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	24

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DATE: Monday, January 09, 2006 [Printable Copy](#) [Create Case](#)

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side by side

Hit Count Set Name
result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L18</u>	L17 and (adjoin\$3 or close)	24	<u>L18</u>
<u>L17</u>	L16 and L6 and L7	53	<u>L17</u>
<u>L16</u>	L14 and L10	53	<u>L16</u>
<u>L15</u>	L14 and L12	0	<u>L15</u>
<u>L14</u>	L13 and L6 and L9	120	<u>L14</u>
<u>L13</u>	(support or (patient with support))	3963948	<u>L13</u>
<u>L12</u>	(magner\$3 with (holder or member))	16	<u>L12</u>
<u>L11</u>	L10 and ((complete) with (RF adj shield\$4))	8	<u>L11</u>
<u>L10</u>	L9 and L8	89	<u>L10</u>
<u>L9</u>	L6 and (magnetic adj resonance)	190	<u>L9</u>
<u>L8</u>	L7 and (magnetic adj resonance)	306	<u>L8</u>
<u>L7</u>	(magnet\$3 with (Rf adj shield\$4)) or (magnet-RF-shield\$4)	383	<u>L7</u>
<u>L6</u>	(RF adj shield\$4) and (holder or member)	819	<u>L6</u>
<u>L5</u>	(RF adj dhild\$4) and (holder or member)	0	<u>L5</u>
<u>L4</u>	5280249	11	<u>L4</u>
<u>L3</u>	5453692	20	<u>L3</u>
<u>L2</u>	5814993	6	<u>L2</u>
<u>L1</u>	6084409	5	<u>L1</u>

END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 24 of 24 returned.

☐ 1. Document ID: US 20040196043 A1 Relevance Rank: 82

Using default format because multiple data bases are involved.

L18: Entry 23 of 24

File: DWPI

Oct 7, 2004

DERWENT-ACC-NO: 2004-746076

DERWENT-WEEK: 200520

COPYRIGHT 2006 DERWENT INFORMATION LTD

TITLE: Radio frequency shield for performing nuclear magnetic resonance procedure
e.g. MRI, has radio-opaque holder with RF shielding and forming shield when holder
is adjoined to cavity of magnet associated with magnet-RF-shielding

INVENTOR: BRANCH, C A; HELPERN, J A

PRIORITY-DATA: 2001US-0985473 (November 2, 2001), 2004US-0826260 (April 19, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US <u>20040196043 A1</u>	October 7, 2004		011	G01V003/00

INT-CL (IPC): G01 V 3/00

Full	Title	Creation	Front	Review	Classification	Date	Reference			Claims	Keywords	Drawings

☐ 2. Document ID: US 20030088175 A1 Relevance Rank: 79

L18: Entry 7 of 24

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030088175

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030088175 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpern, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor	NY			02

APPL-NO: 09/985473 [PALM]
DATE FILED: November 2, 2001

INT-CL-PUBLISHED: [07] A61 B 5/05

US-CL-PUBLISHED: 600/410
US-CL-CURRENT: 600/410

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	DOC	Drawings
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☐ 3. Document ID: US 20040194989 A1 Relevance Rank: 79

L18: Entry 6 of 24

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040194989
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040194989 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpern, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor		US		02

APPL-NO: 10/826297 [PALM]
DATE FILED: April 19, 2004

RELATED-US-APPL-DATA:

Application 10/826297 is a division-of US application 09/985473, filed November 2, 2001, PENDING

INT-CL-PUBLISHED: [07] H05 K 9/00

US-CL-PUBLISHED: 174/035.0MS
US-CL-CURRENT: 174/35MS

REPRESENTATIVE-FIGURES: 1B

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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☐ 4. Document ID: US 20050027189 A1 Relevance Rank: 79

L18: Entry 4 of 24

File: PGPB

Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050027189
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050027189 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: February 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpert, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
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Advanced Veterinary Technologies, Inc.

New Windsor NY

02

APPL-NO: 10/826321 [PALM]

DATE FILED: April 19, 2004

RELATED-US-APPL-DATA:

Application 10/826321 is a division-of US application 09/985473, filed November 2, 2001, PENDING

INT-CL-PUBLISHED: [07] G01 V 3/00

US-CL-PUBLISHED: 600/410

US-CL-CURRENT: 600/410

REPRESENTATIVE-FIGURES: 2A

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion, the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Drawings
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☐ 5. Document ID: US 20040196043 A1 Relevance Rank: 79

L18: Entry 5 of 24

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040196043

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040196043 A1

TITLE: Radio frequency shield for nuclear magnetic resonance procedures

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Branch, Craig A.	Cornwall	NY	US
Helpert, Joseph A.	Cornwall	NY	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Advanced Veterinary Technologies, Inc.	New Windsor	NY		02	

APPL-NO: 10/826260 [PALM]
 DATE FILED: April 19, 2004

RELATED-US-APPL-DATA:
 Application 10/826260 is a division-of US application 09/985473, filed November 2, 2001, PENDING

INT-CL-PUBLISHED: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318
 US-CL-CURRENT: 324/318

REPRESENTATIVE-FIGURES: 1C, 2

ABSTRACT:

An apparatus and method for providing RF shielding for performing nuclear magnetic resonance ("NMR") procedures, comprising a radio-opaque holder in combination with radio-opaque magnet components to form an RF shield around a patient undergoing an NMR procedure. In embodiments, a radio-opaque holder having a radio-opaque bottom portion and a radio-opaque canopy is adjoined to an NMR magnet having a radio-opaque cryostat and a radio-opaque service end cap to form an RF shield. A patient is placed on a patient support unit located in the holder bottom portion. The patient support unit, including the patient, is then inserted into the cavity of the NMR magnet and a canopy is placed on top of the bottom portion of the holder. An RF shield is thus created comprising the canopy, the bottom portion of the cryostat of the magnet, and an end cap on the service end of the magnet.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Know	Draw D
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☐ 6. Document ID: US 20040194989 A1 Relevance Rank: 65

L18: Entry 24 of 24

File: DWPI

Oct 7, 2004

DERWENT-ACC-NO: 2004-736117
 DERWENT-WEEK: 200520
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TITLE: RF shielding providing method for patient, involves placing patient on holder that comprises RF shielding for forming complete RF shield around patient when holder is adjoined to cavity of magnet related with magnet-RF-shielding

INVENTOR: BRANCH, C A; HELPERN, J A

PATENT-ASSIGNEE: ADVANCED VETERINARY TECHNOLOGIES INC (ADVEN)

PRIORITY-DATA: 2001US-0985473 (November 2, 2001), 2004US-0826297 (April 19, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>US 20040194989 A1</u>	October 7, 2004		011	H05K009/00

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US20040194989A1	November 2, 2001	2001US-0985473	Div ex
US20040194989A1	April 19, 2004	2004US-0826297	

INT-CL (IPC): H05 K 9/00

RELATED-ACC-NO: 2003-557622;2004-746076 ;2005-194124

ABSTRACTED-PUB-NO: US20040194989A

BASIC-ABSTRACT:

NOVELTY - The method involves placing a patient on a holder (103) that comprises a RF shielding. The shielding forms a complete RF shield around the patient when the holder is adjoined to a cavity (116) of a magnet (115) associated with magnet-RF-shielding. The shielding is placed over a service end of the magnet.

USE - Used for providing a radio frequency shielding during nuclear magnetic resonance (NMR) procedure e.g. diagnostic magnetic resonance imaging (MRI), especially in clinical veterinary applications.

ADVANTAGE - The method facilitates placing patient on holder that comprises RF shielding for complete RF shield around patient when the holder is adjoined to cavity of the magnet, thus effectively supporting NMR procedures as well as AC lighting fixtures.

DESCRIPTION OF DRAWING(S) - The drawing shows a holder with canopy removed, as it relates to an NMR magnet during an NMR procedure.

Holder 103

Magnet 115

Cavity 116

Cryostat 117

Patient support unit 131

ABSTRACTED-PUB-NO: US20040194989A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1B/2

DERWENT-CLASS: S01 S03 S05 V04

EPI-CODES: S01-E02A2; S01-E02A8X; S01-J02; S03-E07A; S05-D02B1; S05-X; V04-U;

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	Draw	Draw D

☐ 7. Document ID: US 4613820 A Relevance Rank: 61

L18: Entry 22 of 24

File: USPT

Sep 23, 1986

US-PAT-NO: 4613820

DOCUMENT-IDENTIFIER: US 4613820 A

TITLE: RF shielded room for NMR imaging system

DATE-ISSUED: September 23, 1986

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Edelstein; William A.	Schenectady	NY		
Eisner; David R.	Schenectady	NY		
Redington; Rowland W.	Schenectady	NY		
Smith; Lowell S.	Schenectady	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
General Electric Company	Schenectady	NY			02

APPL-NO: 06/597803 [PALM]

DATE FILED: April 6, 1984

INT-CL-ISSUED: [04] G01 R 33/20

US-CL-ISSUED: 324/318; 324/300

US-CL-CURRENT: 324/318; 324/300, 505/844, 505/872

FIELD-OF-CLASSIFICATION-SEARCH: 324/300, 324/318-320, 324/322, 324/303, 324/316, 324/309

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4411270</u>	October 1983	Damadian	324/309
<u>4490675</u>	December 1984	Knuettel	324/318

ART-UNIT: 265

PRIMARY-EXAMINER: Tokar; Michael J.

ATTY-AGENT-FIRM: Krauss; Geoffrey H. Davis, Jr.; James C. Snyder; Marvin

ABSTRACT:

A radio-frequency shielded room for a nuclear magnetic resonance imaging system has at least one electrically-conductive shield wall substantially enclosing a predetermined volume adjacent to one end of the bore formed through an imaging magnet within which bore the imaging process is carried out. The at least one wall has an aperture therethrough substantially at and in registration with the one bore end. A hollow shield member, of an electrically-conductive material, extends through the magnet bore and has a first end region periphery aligned with and substantially electrically connected to the entire periphery of the aperture in the at least one wall. A second end of hollow shield member extends at least to the remaining end of the magnet bore, where it is enclosed with an electrically-conductive cap substantially electrically connected about the entire periphery of the hollow shield member second end. The at least one wall, the hollow shield member and the second end cap form a shielded room substantially completely enclosing the volume extending through the magnet bore and adjacent to one end thereof, which volume is effectively shielded from radio frequency signals emanating from outside the enclosed volume.

20 Claims, 5 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw Ds
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☐ 8. Document ID: US 5600245 A Relevance Rank: 54

L18: Entry 16 of 24

File: USPT

Feb 4, 1997

US-PAT-NO: 5600245

DOCUMENT-IDENTIFIER: US 5600245 A

TITLE: Inspection apparatus using magnetic resonance

DATE-ISSUED: February 4, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamamoto; Etsuji	Akishima			JP
Ochi; Hisaaki	Kodaira			JP
Itagaki; Hiroyuki	Kokubunji			JP
Onodera; Yukari	Asaka			JP
Takeuchi; Hiroyuki	Kashiwa			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hitachi, Ltd.	Tokyo			JP	03
Hitachi Medical Corporation	Tokyo			JP	03

APPL-NO: 08/319724 [PALM]

DATE FILED: October 7, 1994

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	5-252820	October 8, 1993
JP	5-330515	December 27, 1993

INT-CL-ISSUED: [06] G01 V 3/00

US-CL-ISSUED: 324/318; 324/319

US-CL-CURRENT: 324/318; 324/319

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/322, 324/307, 324/309, 128/653.5

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5311134</u>	May 1994	Yamagata et al.	324/318
<u>5337001</u>	August 1994	McDougall et al.	324/318
<u>5372137</u>	December 1994	Wong et al.	324/318
<u>5399969</u>	March 1995	Bernstein	324/309

ART-UNIT: 225

PRIMARY-EXAMINER: Arana; Louis M.

ATTY-AGENT-FIRM: Antonelli, Terry, Stout & Kraus, LLP

ABSTRACT:

An inspection apparatus using magnetic resonance includes magnetic field generators for generating a static magnetic field, a gradient magnetic field and a radio frequency magnetic field, respectively, a signal detector for detecting magnetic resonance signals from an inspected object, a computer for executing arithmetic operations for detection signals from the signal detector and an output device of the result of the arithmetic operations by the computer. The gradient magnetic field generator includes first and second gradient coils, the first gradient coil is a coil fixed to a magnet for generating a static magnetic field, the second gradient coil is a movable coil, and the magnetic field generated by the second gradient coil at a conducting portion of the magnet is offset by the magnetic field generated by the first gradient coil. According to this construction, an eddy current that occurs with the time change of the gradient magnetic field can be reduced.

33 Claims, 37 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NOAC	New De
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☐ 9. Document ID: US 20020173717 A1 Relevance Rank: 48

L18: Entry 8 of 24

File: PGPB

Nov 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020173717
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020173717 A1

TITLE: Apparatus for use in neonatal magnetic resonance imaging

PUBLICATION-DATE: November 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Rohling, Kenneth William	Burnt Hills	NY	US
Watkins, Ronald Dean	Niskayuna	NY	US
Dumoulin, Charles Lucian	Ballston Lake	NY	US
Piel, Joseph Edward JR.	Scotia	NY	US
Rossi, Charles John JR.	Amsterdam	NY	US
Giaquinto, Randy Otto John	Burnt Hills	NY	US

APPL-NO: 09/681687 [PALM]
DATE FILED: May 21, 2001

INT-CL-PUBLISHED: [07] A61 B 5/05

US-CL-PUBLISHED: 600/415
US-CL-CURRENT: 600/415

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

An incubator arrangement and radiofrequency (RF) coil are provided for use in a Magnetic Resonance Imaging (MRI) system. The incubator arrangement comprises an enclosure adapted to support a subject in a magnet of the MRI system during imaging and a radiofrequency coil disposed within the enclosure. The RF coil is adapted to provide visual and physical access to the subject, and further adapted to obtain a selected signal to noise ratio.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Keyword	Drawings
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☐ 10. Document ID: US 5735278 A Relevance Rank: 47

L18: Entry 15 of 24

File: USPT

Apr 7, 1998

US-PAT-NO: 5735278
DOCUMENT-IDENTIFIER: US 5735278 A

TITLE: Surgical procedure with magnetic resonance imaging

DATE-ISSUED: April 7, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hoult; David	Winnipeg			CA
Saunders; John K.	Winnipeg			CA
Sutherland; Garnette Roy	Calgary			CA
Roberts; Franklin A.	Winnipeg			CA

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
National Research Council of Canada	Ottawa			CA	03

APPL-NO: 08/616737 [PALM]

DATE FILED: March 15, 1996

INT-CL-ISSUED: [06] A61 B 5/055

US-CL-ISSUED: 128/653.2; 128/653.5, 324/318, 324/322

US-CL-CURRENT: 600/422; 324/318, 324/322

FIELD-OF-CLASSIFICATION-SEARCH: 128/653.2, 128/653.5, 324/307, 324/309, 324/318, 324/322

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4875485</u>	October 1989	Matsutani	128/653.5
<u>4985678</u>	January 1991	Gangarosa et al.	
<u>5008624</u>	April 1991	Yoshida	
<u>5477146</u>	December 1995	Jones	128/653.5
<u>5497773</u>	March 1996	Kuhara et al.	128/653.5
<u>5577503</u>	November 1996	Bonutti	128/653.2

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
31 40225 A1	0000	DE	

OTHER PUBLICATIONS

MRI Scanner Transport System 8306 Magnetic Resonance Medicine 32(1994) Jul. No. 1
Baltimore MD US.

ART-UNIT: 335

PRIMARY-EXAMINER: Smith; Ruth S.

ATTY-AGENT-FIRM: Battison; Adrian D. Thrift; Murray E.

ABSTRACT:

Apparatus is provided for use in surgical procedures comprising an operating table for receiving a patient for surgery and a magnetic resonance imaging system for obtaining images of a part of the patient at a series of times through the surgical procedure for analysis by the surgical team to allow the surgical team to monitor the progress of the surgery. The high field magnet and the operating table are shaped and arranged for positioning of the part of the patient into the magnetic field while the patient remains in place on the table and the magnet is mounted for movement between a first position spaced from the table and the patient thereon to allow the surgical team to carry out the surgical procedure and a second position for applying the magnetic field to the part of the patient. The table remains substantially stationary and only the magnet is moved to a position spaced from an adjacent end of the table to allow the surgical team to move around the adjacent end of table and to each side of the table to access the patient.

20 Claims, 10 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Know	Draw D
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☐ 11. Document ID: US 5225782 A Relevance Rank: 46

L18: Entry 20 of 24

File: USPT

Jul 6, 1993

US-PAT-NO: 5225782

DOCUMENT-IDENTIFIER: US 5225782 A

TITLE: Eddy current free MRI magnet with integrated gradient coils

DATE-ISSUED: July 6, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laskaris; Evangelos T.	Schenectady	NY		
Roemer; Peter B.	Schenectady	NY		
Dorri; Bizhan	Clifton Park	NY		
Vermilyea; Mark E.	Schenectady	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
General Electric Company	Schenectady	NY			02

APPL-NO: 07/759389 [PALM]

DATE FILED: September 13, 1991

INT-CL-ISSUED: [05] G01 V 3/00

US-CL-ISSUED: 324/318; 324/319

US-CL-CURRENT: 324/318; 324/319

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/320, 335/216, 335/296, 335/297, 335/300

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4646024</u>	February 1987	Schenck et al.	324/318
<u>4652824</u>	March 1987	Oppelt	324/319
<u>4737716</u>	April 1988	Roemer et al.	324/319
<u>4876510</u>	October 1989	Siebold et al.	324/318
<u>4924184</u>	May 1990	Yoda	324/318
<u>4924198</u>	May 1990	Laskaris	335/216
<u>4931759</u>	June 1990	Breneman et al.	324/320
<u>5101638</u>	April 1992	White	324/318

ART-UNIT: 263

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: McDaniel; James R. Webb, II; Paul R.

ABSTRACT:

This invention relates to refrigerated superconducting eddy current free MR magnets having integrated gradient coils. In particular, the amount of resultant eddy currents produced by the magnet are substantially reduced while reducing the size and weight, and, therefore, the cost of the superconducting magnet required to produce an acceptable MR image.

16 Claims, 3 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	EMC	Draw P
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☐ 12. Document ID: US 5278502 A Relevance Rank: 46

L18: Entry 19 of 24

File: USPT

Jan 11, 1994

US-PAT-NO: 5278502

DOCUMENT-IDENTIFIER: US 5278502 A

TITLE: Refrigerated superconducting MR magnet with integrated cryogenic gradient coils

DATE-ISSUED: January 11, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laskaris; Evangelos T.	Schenectady	NY		
Dorri; Bizhan	Clifton Park	NY		
Vermilyea; Mark E.	Schenectady	NY		
Mueller; Otward M.	Ballston Lake	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
General Electric Company	Schenectady	NY			02

APPL-NO: 07/759387 [PALM]

DATE FILED: September 13, 1991

INT-CL-ISSUED: [05] G01 V 3/00

US-CL-ISSUED: 324/318; 324/319

US-CL-CURRENT: 324/318; 324/319

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/320, 335/216, 335/296, 335/297, 335/300

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4646024</u>	February 1987	Schenck et al.	324/318
<u>4652824</u>	March 1987	Oppelt	324/319
<u>4737716</u>	April 1988	Roemer et al.	324/319
<u>4876510</u>	October 1989	Siebold et al.	324/318
<u>4924184</u>	May 1990	Yoda	324/318
<u>4924185</u>	May 1990	Matsutani	324/319
<u>4924198</u>	May 1990	Laskaris	335/216

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
0433002	June 1991	EP	

ART-UNIT: 263

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: McDaniel; James R. Webb, II; Paul R.

ABSTRACT:

This invention relates to refrigerated superconducting MR magnets having integrated cryogenic gradient coils. In particular, the amount of eddy currents produced by the magnet are substantially reduced while reducing the size and weight, and, therefore, the cost of the superconducting magnet required to produce an acceptable MR image.

15 Claims, 4 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Keywords	Drawings
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☐ 13. Document ID: US 20050139758 A1 Relevance Rank: 45

L18: Entry 1 of 24

File: PGPB

Jun 30, 2005

PGPUB-DOCUMENT-NUMBER: 20050139758

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050139758 A1

TITLE: Test object for calibration of imaging measurements of mammalian skeletal joints

PUBLICATION-DATE: June 30, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
White, David L.	Oakland	CA	US
Kothari, Manish	San Francisco	CA	US
Carano, Richard A.	San Ramon	CA	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Synarc, Inc.	San Francisco	CA		02

APPL-NO: 10/870686 [PALM]

DATE FILED: June 17, 2004

RELATED-US-APPL-DATA:

Application 10/870686 is a continuation-in-part-of US application 10/388118, filed March 12, 2003, PENDING

Application is a non-provisional-of-provisional application 60/370019, filed April 4, 2002,

INT-CL-PUBLISHED: [07] G01 D 18/00

US-CL-PUBLISHED: 250/252.1

US-CL-CURRENT: 250/252.1

REPRESENTATIVE-FIGURES: 5A

ABSTRACT:

The invention provides a test device or "phantom" for use in conjunction with medical imaging modalities. In one embodiment, the phantom replicates the attenuation and absorption properties of joint articular cartilage. The phantom is useful for quality assurance of images of joints obtained using an array of medical imaging modalities.

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 10/388,118, filed Mar. 12, 2003, which claimed priority to U.S. Provisional Patent Application Ser. No. 60/370,019, filed Apr. 4, 2002, the complete disclosures of which are incorporated herein by reference.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 14. Document ID: US 5923169 A Relevance Rank: 44

L18: Entry 14 of 24

File: USPT

Jul 13, 1999

US-PAT-NO: 5923169

DOCUMENT-IDENTIFIER: US 5923169 A

TITLE: Magnetic resonance imaging system with floating pole pieces

DATE-ISSUED: July 13, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ehnholm; Gosta Jakob	Helsinki			FI
Kinanen; Ilmari	Espoo			FI
Gylling; Robert G.	Helsinki			FI
Young; Ian R.	West Overton			GB
DeMeester; Gordon D.	Wickliffe	OH		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Picker Nordstar Corporation	Helsinki			FI	03

APPL-NO: 08/972192 [PALM]

DATE FILED: November 18, 1997

INT-CL-ISSUED: [06] G01 V 3/00

US-CL-ISSUED: 324/319; 324/320, 335/296

US-CL-CURRENT: 324/319; 324/320, 335/296

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/320, 324/322, 324/300, 324/307, 324/309, 335/216, 335/296, 335/297, 335/298, 600/410, 600/421, 600/422
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5250901</u>	October 1993	Kaufman et al.	324/318
<u>5519372</u>	May 1996	Palkovich et al.	324/318
<u>5735278</u>	April 1998	Hoult et al.	324/318

ART-UNIT: 287

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: Fay, Sharpe, Beall, Fagan, Minnich & McKee, LLP

ABSTRACT:

A magnetic resonance imaging suite is sheathed with plates (32, 34, 36) of iron or other ferrous material. The plates define projections (42, 44, 54, 54', 68) in alignment with each other on opposite ceiling and floor or wall surfaces. A pair of magnetic pole pieces (10, 10'; 50, 50'; 60, 60') are surrounded by superconducting electromagnetic coils (12, 12'; 52, 52'; 62, 62'). The pole pieces are positioned between the ferrous plates in axial alignment. When current flows through the electromagnetic coils, magnetic flux flows between the pole pieces. The ferrous wall sheathing or other ferrous constructions define a flux return path. The pole pieces are magnetically attracted toward each other and are each magnetically mirrored in and attracted toward the adjacent ferrous flux return path. The pole pieces are positioned relative to each other and the ferrous flux return path such that the attraction between the pole pieces is balanced by the attraction between each pole piece and its magnetically mirrored image in the adjacent ferrous material of the flux return path. Optionally, the magnets are selectively extinguished and one or both pole pieces are moved for better access to the patient.

25 Claims, 5 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Know	Draw De
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☐ 15. Document ID: US 6104192 A Relevance Rank: 44

L18: Entry 13 of 24

File: USPT

Aug 15, 2000

US-PAT-NO: 6104192

DOCUMENT-IDENTIFIER: US 6104192 A

TITLE: Magnetic resonance imaging system with floating pole pieces

DATE-ISSUED: August 15, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ehnholm; Gosta Jakob	Helsinki			FI
Kinanen; Ilmari	Espoo			FI
Gylling; Robert G.	Helsinki			FI
Young; Ian R.	West Overton Nr. Marlborough			GB
DeMeester; Gordon D.	Wickliffe	OH		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Picker Nordstar Corporation	Helsinki			FI	03

APPL-NO: 09/304741 [PALM]

DATE FILED: May 4, 1999

PARENT-CASE:

This is a continuation application of pending prior application U.S. Ser. No. 08/972,192, filed on Nov. 18, 1997.

INT-CL-ISSUED: [07] G01 V 3/00

US-CL-ISSUED: 324/319; 324/320

US-CL-CURRENT: 324/319; 324/320

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/320, 324/322, 324/300, 324/307, 324/309, 335/216, 335/296, 335/297, 335/298, 600/410, 600/421, 600/422
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4766378</u>	August 1988	Danby et al.	324/307
<u>5250901</u>	October 1993	Kaufman et al.	324/318
<u>5519372</u>	May 1996	Palkovich et al.	324/318
<u>5735278</u>	April 1998	Hoult et al.	324/318

ART-UNIT: 282

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: Fay, Sharpe, Fagan, Minnich & McKee, LLP

ABSTRACT:

A magnetic resonance imaging suite is sheathed with plates (32, 34, 36) of iron or other ferrous material. The plates define projections (42, 44, 54, 54', 68) in alignment with each other on opposite ceiling and floor or wall surfaces. A pair of magnetic pole pieces (10, 10'; 50, 50'; 60, 60') are surrounded by superconducting electromagnetic coils (12, 12'; 52, 52'; 62, 62'). The pole pieces are positioned between the ferrous plates in axial alignment. When current flows through the electromagnetic coils, magnetic flux flows between the pole pieces. The ferrous wall sheathing or other ferrous constructions define a flux return path. The pole pieces are magnetically attracted toward each other and are each magnetically mirrored in and attracted toward the adjacent ferrous flux return path. The pole pieces are positioned relative to each other and the ferrous flux return path such that the attraction between the pole pieces is balanced by the attraction between each pole piece and its magnetically mirrored image in the adjacent ferrous material of the flux return path. Optionally, the magnets are selectively extinguished and one or both pole pieces are moved for better access to the patient.

21 Claims, 5 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Keywords	Drawings
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☐ 16. Document ID: US 5179338 A Relevance Rank: 43

L18: Entry 21 of 24

File: USPT

Jan 12, 1993

US-PAT-NO: 5179338

DOCUMENT-IDENTIFIER: US 5179338 A

TITLE: Refrigerated superconducting MR magnet with integrated gradient coils

DATE-ISSUED: January 12, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laskaris; Evangelos T.	Schenectady	NY		
Roemer; Peter B.	Schenectady	NY		
Dorri; Bizhan	Clifton Park	NY		
Vermilyea; Mark E.	Schenectady	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
General Electric Company	Schenectady	NY			02

APPL-NO: 07/759337 [PALM]

DATE FILED: September 13, 1991

INT-CL-ISSUED: [05] G01 V 3/00

US-CL-ISSUED: 324/318; 335/300

US-CL-CURRENT: 324/318; 335/300

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/320, 335/299, 335/216,

335/301, 335/300

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4646024</u>	February 1987	Schenck et al.	324/318
<u>4652824</u>	March 1987	Oppelt	324/318
<u>4737716</u>	April 1988	Roemer et al.	324/319
<u>4837541</u>	June 1989	Pelc	335/301
<u>4924198</u>	May 1990	Laskaris	335/216
<u>4983942</u>	January 1991	Benesch	324/318

ART-UNIT: 263

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: McDaniel; James R.

ABSTRACT:

The invention relates to refrigerated superconducting MR magnets having integrated gradient coils. In particular, the amount of eddy currents produced by the magnet are substantially reduced while reducing the size and weight, and, therefore, the cost of the superconducting magnet required to produce an MR image.

14 Claims, 3 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	KMC	Draw D
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☐ 17. Document ID: US 6611702 B2 Relevance Rank: 43

L18: Entry 9 of 24

File: USPT

Aug 26, 2003

US-PAT-NO: 6611702

DOCUMENT-IDENTIFIER: US 6611702 B2

TITLE: Apparatus for use in neonatal magnetic resonance imaging

DATE-ISSUED: August 26, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rohling; Kenneth William	Burnt Hills	NY		
Watkins; Ronald Dean	Niskayuna	NY		

Dumoulin; Charles Lucian	Ballston Lake	NY
Piel, Jr.; Joseph Edward	Scotia	NY
Rossi, Jr.; Charles John	Amsterdam	NY
Giaquinto; Randy Otto John	Burnt Hills	NY

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
General Electric Company	Niskayuna	NY			02

APPL-NO: 09/681687 [PALM]

DATE FILED: May 21, 2001

INT-CL-ISSUED: [07] A61 B 5/055

US-CL-ISSUED: 600/415; 600/22, 600/422, 600/411

US-CL-CURRENT: 600/415; 600/22, 600/411, 600/422

FIELD-OF-CLASSIFICATION-SEARCH: 600/415, 600/407, 600/410, 600/22, 600/422

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5197474</u>	March 1993	Englund et al.	128/653.5
<u>5525905</u>	June 1996	Mohapatra et al.	324/318
<u>5619996</u>	April 1997	Beresten	128/653.6
<u>5800335</u>	September 1998	Koch et al.	600/22
<u>5823960</u>	October 1998	Young et al.	600/415
<u>5990681</u>	November 1999	Richard et al.	324/318
<u>6366798</u>	April 2002	Green	600/411

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
9848756	January 1998	WO	
WO 98/48756	November 1998	WO	

OTHER PUBLICATIONS

WO 98/48756 A1 International Application published under the PCT, Nordell et al, "Incubator Arrangement For Use In Magnetic Resonance Imaging".

ART-UNIT: 3737

PRIMARY-EXAMINER: Shah; Devaang

ATTY-AGENT-FIRM: Testa; Jean K. Patnode; Patrick K.

ABSTRACT:

An incubator arrangement and radiofrequency (RF) coil are provided for use in a Magnetic Resonance Imaging (MRI) system. The incubator arrangement comprises an enclosure adapted to support a subject in a magnet of the MRI system during imaging and a radiofrequency coil disposed within the enclosure. The RF coil is adapted to provide visual and physical access to the subject, and further adapted to obtain a selected signal to noise ratio.

6 Claims, 8 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	KMC	Draw
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☐ 18. Document ID: US 5530355 A Relevance Rank: 41

L18: Entry 17 of 24

File: USPT

Jun 25, 1996

US-PAT-NO: 5530355

DOCUMENT-IDENTIFIER: US 5530355 A

TITLE: Solenoidal, octopolar, transverse gradient coils

DATE-ISSUED: June 25, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Doty; F. David	Columbia	SC		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Doty Scientific, Inc.	Columbia	SC			02

APPL-NO: 08/362598 [PALM]

DATE FILED: January 10, 1995

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE
PCT/US93/04574	May 13, 1993	WO94/01785	Jan 20, 1994	Jan 10, 1995

INT-CL-ISSUED: [06] G01 V 3/14, H01 F 5/02, H01 F 27/28

US-CL-ISSUED: 324/318; 324/322, 335/299, 336/225

US-CL-CURRENT: 324/318; 324/322, 335/299, 336/225

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/322, 324/300, 335/299, 336/225

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>2354331</u>	July 1944	Polydoroff	
<u>2498475</u>	February 1950	Adams	
<u>3237090</u>	February 1966	Royer et al.	
<u>3466499</u>	September 1969	Beth	
<u>3569823</u>	March 1971	Golay	
<u>3671902</u>	June 1972	Westendorp	
<u>3789832</u>	February 1974	Damadian	
<u>3924211</u>	December 1975	Ioffe et al.	
<u>3932805</u>	January 1976	Abe et al.	
<u>4038622</u>	July 1977	Purcell	335/216
<u>4165479</u>	August 1979	Mansfield	
<u>4468622</u>	August 1984	Frese et al.	
<u>4514586</u>	April 1985	Waggoner	
<u>4595899</u>	June 1986	Smith et al.	
<u>4642569</u>	February 1987	Hayes et al.	
<u>4646024</u>	February 1987	Schenck et al.	
<u>4646046</u>	February 1987	Vavrek et al.	
<u>4707663</u>	November 1987	Minkoff et al.	324/319
<u>4733189</u>	March 1988	Punchard et al.	
<u>4737716</u>	April 1988	Roemer et al.	
<u>4766383</u>	August 1988	Fox et al.	
<u>4768008</u>	August 1988	Purcell et al.	
<u>4820988</u>	April 1989	Crooks et al.	
<u>4849696</u>	July 1989	Brun et al.	
<u>4849697</u>	July 1989	Cline et al.	324/306
<u>4876479</u>	October 1989	Kawabata et al.	
<u>4876510</u>	October 1989	Siebold et al.	
<u>4885540</u>	December 1989	Snoddy et al.	324/318
<u>4896129</u>	January 1990	Turner et al.	
<u>4910462</u>	March 1990	Roemer et al.	
<u>4920011</u>	April 1990	Ogawa et al.	
<u>4926125</u>	May 1990	Roemer	
<u>4935714</u>	June 1990	Vermilyea	
<u>4954781</u>	September 1990	Hirata	
<u>4965521</u>	October 1990	Egloff	
<u>4978920</u>	December 1990	Mansfield et al.	
<u>5036282</u>	July 1991	Morich et al.	
<u>5055789</u>	October 1991	Kondo et al.	
<u>5061891</u>	October 1991	Totsuka et al.	
<u>5072184</u>	December 1991	Dickinson	
<u>5084676</u>	January 1992	Saho et al.	
<u>5132621</u>	July 1992	Kang et al.	
<u>5166619</u>	November 1992	Ries	
<u>5185577</u>	February 1993	Minemura	

<u>5198769</u>	March 1993	Frese et al.
<u>5225782</u>	July 1993	Laskaris et al.
<u>5235283</u>	August 1993	Lehne et al.

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
304126	February 1989	EP	
586983	March 1994	EP	
4029477	April 1991	DE	
54-38792	March 1979	JP	
2050062	December 1980	GB	

OTHER PUBLICATIONS

E. C. Wong et al., Magnetic Resonance in Medicine, vol. 21, 1 Sep. 1991, pp. 39-48.
J. P. Boehmer et al., Journal of Magnetic Resonance, vol. 83, 1 Jun. 1989, pp. 152-159.

Y. Bangert and P. Mansfield, J. Physics E 15, "Magnetic Field Gradient Coils for NMR Imaging," 235-239 (1982).

P. Mansfield and B. Chapman, J. Magnetic Resonance 66, "Active Magnetic Screening of Gradient Coils in NMR Imaging," 573-576 (Feb. 1986).

P. Mansfield and B. Chapman, J. Magnetic Resonance 72, "Multinshield Active Magnetic Screening of Coil Structures in NMR," 211-233 (1987).

D. G. Taylor, R. Inamdar and M-C Bushell, Phys. Med. Biol. 33, "NMR Imaging in Theory and in Practice," 635-670 (1988).

B. H. Suits and D. E. Wilken, J. Physics E 22, "Improving Magnetic Field Gradient Coils for NMR Imaging," 565-573 (1989).

R. Hurwitz et al., Radiology 173, "Acoustic Analysis of Gradient-Coil Noise in MRI," 545-548 (1989).

J. J. Van Vaals and A. H. Bergman, J. Magnetic Resonance 90, "Optimization of Eddy-Current Compensation," 52-70 (1990).

M. K. Stehling, R. Turner, P. Mansfield, Science 254, "Echo-Planar Imaging: Magnetic Resonance Imaging in a Fraction of a Second," 43-49 (1991).

A. Jasinski et al., Magnetic Resonance in Medicine 24, "Shielded Gradient Coils and Radio Frequency Probes for High-Resolution Imaging of Rat Brains," 29-41 (1992).

P. Jehenson, M. Westphal, and N. Schuff, J. Magnetic Resonance 90, "Analytical Method for the Compensation of Eddy-Current Effects Induced by Pulsed Magnetic Field Gradients In NMR Systems" (1990) 264-278.

ART-UNIT: 225

PRIMARY-EXAMINER: O'Shea; Sandra L.

ASSISTANT-EXAMINER: Phillips; Roger

ATTY-AGENT-FIRM: Oppedahl & Larson

ABSTRACT:

A structure provides a gradient field useful in magnetic resonance imaging. Axially aligned, solenoidal-like coils are symmetrically distributed around the perimeter of the bore of a superconducting magnet in an MRI system so as to produce transverse gradients in the X and Y directions with exceptionally high efficiency

and exceptionally low acoustic noise. Opposed solenoidal endcoils may be added to reduce axial flux leakage by generating an axial quadrupolar field. Radially aligned coils may be positioned near each end of the axial coils to reduce leakage flux by adding a transverse quadrupolar field to form a resulting octopolar field. Typically, the solenoid-like coils have a mean radius of about 15% of the radius of that of the imaging ellipsoidal region. A thick-walled stainless steel, copper and resin cylinder may be used to simplify gradient shielding problems. Silver plated bronze or stainless steel sheet is used as an rf shield.

43 Claims, 15 Drawing figures

Full	Title	Station	Front	Review	Classification	Date	Reference		Claims	Knowl	Draw D
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☐ 19. Document ID: US 20050033407 A1 Relevance Rank: 40

L18: Entry 3 of 24

File: PGPB

Feb 10, 2005

PGPUB-DOCUMENT-NUMBER: 20050033407
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050033407 A1

TITLE: Stent designs which enable the visibility of the inside of the stent during MRI

PUBLICATION-DATE: February 10, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Weber, Jan	Maple Grove	MN	US
Holman, Thomas J.	Princeton	MN	US
Heggestuen, James	Stillwater	MN	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
SciMed Life Systems, Inc.	Maple Grove	MN		02	

APPL-NO: 10/636063 [PALM]
DATE FILED: August 7, 2003

INT-CL-PUBLISHED: [07] A61 F 2/06

US-CL-PUBLISHED: 623/001.15
US-CL-CURRENT: 623/1.15

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

A medical device that inhibits distortion of medical resonance images taken of the device. In particular, various structures are utilized to allow visibility

proximate, and inside of, a tubular member, such as a stent. In one embodiment, the stent is constructed such that any closed path encircling at least a circumference of the stent will pass through at least two materials to reduce or eliminate electrical loops formed in the stent.

Full	Title	Craton	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 20. Document ID: US 6466018 B1 Relevance Rank: 39

L18: Entry 10 of 24

File: USPT

Oct 15, 2002

US-PAT-NO: 6466018

DOCUMENT-IDENTIFIER: US 6466018 B1

TITLE: Rotating body coil apparatus for interventional magnetic resonance imaging

DATE-ISSUED: October 15, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dumoulin; Charles Lucian	Ballston Lake	NY		
Jones; Philip Trefor	London			GB
Edelstein; William Alan	Schenectady	NY		
Assif; Benjamin	Ramat-Hasharon			IL
Hamo; Nissim Ben	Kiryat Bialik			IL
Keren; David	Kiryat-Yam			IL

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
General Electric Company	Niskayuna	NY			02	
Imperial College of Science and Medicine	London			GB	03	

APPL-NO: 09/541544 [PALM]

DATE FILED: April 3, 2000

INT-CL-ISSUED: [07] G01 V 3/00

US-CL-ISSUED: 324/318

US-CL-CURRENT: 324/318

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 329/318, 329/307, 329/309, 329/320, 329/322, 329/319

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4692705</u>	September 1987	Hayes	324/318
<u>4887039</u>	December 1989	Roemer et al.	324/322
<u>5153546</u>	October 1992	Laskaris	335/216
<u>5600245</u>	February 1997	Yamamoto et al.	324/318
<u>5696449</u>	December 1997	Boskamp	324/318
<u>5999839</u>	December 1999	Hardy et al.	600/413
<u>6043658</u>	March 2000	Leussier	324/318

ART-UNIT: 2862

PRIMARY-EXAMINER: Lefkowitz; Edward

ASSISTANT-EXAMINER: Vargas; Dixomara

ATTY-AGENT-FIRM: Testa; Jean K. Ingraham; Donald S.

ABSTRACT:

A rotating body coil assembly for use with an open MR magnet for imaging at least a portion of a subject comprises a resonant structure configured to rotate about the subject and to permit access to the subject during imaging. The body coil assembly comprises first and second end ring assemblies positioned on opposing sides of the imaging space. The first and second end ring assemblies are each configured to energize the body coil assembly. A plurality of element assemblies are disposed between and connecting the first and second end ring assemblies for providing structural support and electrical isolation of the body coil assembly. A base assembly is coupled to the first and second end ring assemblies and at least one of the element assemblies. The base assembly is adapted to rotate the first and second end ring assemblies in cooperation with the plurality of element assemblies about the portion of the subject while the portion of the subject is inside the imaging space for permitting access to the subject during imaging.

16 Claims, 15 Drawing figures

Full	Title	Crat	Front	Review	Classification	Date	Reference			Claims	Pub	Draw	U
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☐ 21. Document ID: US 20050110490 A1 Relevance Rank: 37

L18: Entry 2 of 24

File: PGPB

May 26, 2005

PGPUB-DOCUMENT-NUMBER: 20050110490

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050110490 A1

TITLE: Phantom for production of controllable fMRI signal

PUBLICATION-DATE: May 26, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Zhao, Qun	Gainesville	FL	US
Duensing, G. Randy	Gainesville	FL	US
Cheng, Hu	Gainesville	FL	US
Edelstein, William A.	Schenectady	NY	US

APPL-NO: 10/957822 [PALM]

DATE FILED: October 4, 2004

RELATED-US-APPL-DATA:

Application is a non-provisional-of-provisional application 60/508570, filed October 3, 2003,

INT-CL-PUBLISHED: [07] G01 V 3/00, A61 B 5/05

US-CL-PUBLISHED: 324/311; 600/413

US-CL-CURRENT: 324/311; 600/413

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

The subject invention relates to a method and apparatus for producing stimulated MRI data. In an embodiment, a remote-controlled "smart phantom" can produce simulated data. The simulated data can be acquired from a MRI system. The subject device can generate control signals and send the generated control signals to secondary coils/probes placed in the subject smart phantom. The control signals determine the current flow in the secondary coils/probes, which act as local spin magnetization amplifiers and thus produce regions of variable contrast to noise ratio. The control signals can be generated with various parameters, such as BOLD models, different levels of contrast-to-noise ratio (CNR), signal intensities, and physiological signals. Comparisons can be made with the widely-used simulated data by computers. Validation of the subject smart phantom can be performed with both theoretical analysis and data of human subjects.

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 60/508,570, filed Oct. 3, 2003.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	WDC	Draw D
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☐ 22. Document ID: US 5304934 A Relevance Rank: 36

L18: Entry 18 of 24

File: USPT

Apr 19, 1994

US-PAT-NO: 5304934

DOCUMENT-IDENTIFIER: US 5304934 A

TITLE: Superconducting magnet for imaging human limbs

DATE-ISSUED: April 19, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laskaris; Evangelos T.	Schenectady	NY		
Dorri; Bizhan	Clifton Park	NY		
Herd; Kenneth G.	Schenectady	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
General Electric Company	Schenectady	NY			02

APPL-NO: 08/000302 [PALM]

DATE FILED: January 4, 1993

INT-CL-ISSUED: [05] G01 R 33/20

US-CL-ISSUED: 324/318; 324/319

US-CL-CURRENT: 324/318; 324/319

FIELD-OF-CLASSIFICATION-SEARCH: 335/216, 335/301, 62/47.1, 62/50.2, 62/51.1, 324/320, 324/318, 324/319, 324/322, 324/300, 324/309, 324/307

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4800354</u>	January 1989	Laskaris	335/216
<u>4924198</u>	May 1990	Laskaris	335/216
<u>5001448</u>	March 1991	Srivastava et al.	335/301
<u>5045794</u>	September 1991	Dorri et al.	324/320
<u>5129232</u>	July 1992	Minal et al.	62/51.1
<u>5153546</u>	October 1992	Laskaris	335/216
<u>5201184</u>	April 1993	Roth	62/47.1
<u>5210512</u>	May 1993	Davies	335/216

ART-UNIT: 267

PRIMARY-EXAMINER: Tokar; Michael J.

ATTY-AGENT-FIRM: Webb, II; Paul R.

ABSTRACT:

This invention relates to a superconducting magnet of the type that has a relatively small imaging volume. Such structures of this type, generally, allow the operator to image human limbs without the use of a larger, more costly superconducting magnet.

11 Claims, 21 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	FIGS	Drawings
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☐ 23. Document ID: US 6191583 B1 Relevance Rank: 36

L18: Entry 12 of 24

File: USPT

Feb 20, 2001

US-PAT-NO: 6191583

DOCUMENT-IDENTIFIER: US 6191583 B1

TITLE: Nuclear magnetic resonance detector used for reducing probe ringing

DATE-ISSUED: February 20, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gerald, II; Rex E.	Brookfield	IL		
Nunez; Luis H.	Elmhurst	IL		
Rathke; Jerome W.	Lockport	IL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The University of Chicago	Chicago	IL			02

APPL-NO: 09/360553 [PALM]

DATE FILED: July 26, 1999

INT-CL-ISSUED: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/322, 324/321

US-CL-CURRENT: 324/318; 324/321, 324/322FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/321, 324/322, 324/300, 324/307
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5045793</u>	September 1991	Rathke	324/318
<u>5574370</u>	November 1996	Woelk et al.	324/320
<u>5744957</u>	April 1998	Vaughan	324/318
<u>6046592</u>	April 2000	Rathke et al.	324/321

ART-UNIT: 282

PRIMARY-EXAMINER: Oda; Christine K.

ASSISTANT-EXAMINER: Shrivastav; Brij B.

ATTY-AGENT-FIRM: Mason, Kolehmainen, Rathburn & Wyss

ABSTRACT:

A toroid cavity detector includes an outer cylindrical housing through which extends a wire along the central axis of the cylindrical housing from a closed bottom portion to the closed top end of the cylindrical housing. In order to analyze a sample placed in the housing, the housing is placed in an externally applied static main homogeneous magnetic field (B.sub.0). An RF current pulse is supplied through the wire such that an alternately energized and de-energized magnetic field (B.sub.1) is produced in the toroid cavity which B.sub.1 field is oriented perpendicular to the B.sub.0 field. Following the RF current pulse, the response of the sample to the applied B.sub.0 field is detected and analyzed. In order to minimize the detrimental effect of probe ringing, the cylindrically shaped housing is elongated sufficiently in length so that the top and bottom portions are located in weaker, fringe areas of the static main magnetic B.sub.0 field. In addition, a material that tends to lessen the effect of probe ringing is positioned along the top and bottom ends of the toroid cavity. In another embodiment of the present invention, a plug is positioned adjacent the inside of the top and bottom ends of the toroid cavity so that the sample contained in the toroid cavity is maintained in the strongest and most homogeneous region of the static magnetic B.sub.0 field.

19 Claims, 3 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Draw	Draw
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☐ 24. Document ID: US 6404201 B1 Relevance Rank: 36

L18: Entry 11 of 24

File: USPT

Jun 11, 2002

US-PAT-NO: 6404201

DOCUMENT-IDENTIFIER: US 6404201 B1

TITLE: Magnetic resonance imaging RF coil

DATE-ISSUED: June 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boskamp; Eddy B.	Menomonee Falls	WI		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
GE Medical Systems Global Technology Company, LLC	Waukesha	WI			02	

APPL-NO: 09/681972 [PALM]

DATE FILED: July 2, 2001

INT-CL-ISSUED: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/319, 324/322

US-CL-CURRENT: 324/318; 324/319, 324/322

FIELD-OF-CLASSIFICATION-SEARCH: 324/318, 324/319, 324/322, 324/300, 324/312, 324/314, 600/422

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5646530</u>	July 1997	Strenk et al.	
<u>5744957</u>	April 1998	Vaughan, Jr.	
<u>5886596</u>	March 1999	Vaughan, Jr.	
<u>6040697</u>	March 2000	Misic	
<u>6236206</u>	June 2001	Harthman et al.	324/318

ART-UNIT: 2862

PRIMARY-EXAMINER: Williams; Hezron

ASSISTANT-EXAMINER: Shrivastav; Brij B.

ATTY-AGENT-FIRM: Della Penna; Michael A.

ABSTRACT:

A radio frequency (RF) coil system for resonance imaging/analysis comprising a primary coil element having a plurality of axial conductors spaced to form a generally tubular structure having two ends and defining a coil volume, and a first pair of spoiler coils. The first pair of spoiler coils each comprising a plurality of axial conductors spaced to form a generally tubular structure and defining a coil volume. Each of the spoiler coils is positioned adjacent to and overlapping an end of the primary coil. Each of the primary and spoiler coils is also adapted to carry an RF signal, wherein the signal in the spoiler coils is 180 degrees out of phase with the signal in the primary coil. The counter-phased spoiler coils act to rapidly drive down the RF magnetic field generated by the primary coil in the region of the ends of the primary coil to reduce the occurrence of aliasing artifacts from outside the imaging field of view.

20 Claims, 7 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw Dg
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